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ABSTRACT

This report consists of two main sections. The first presents a theory about how supervisors decide on the causes of a subordinate's poor performance and what they do about it. A two-stage process is suggested. The first stage involves the supervisor making attributions about the causes of the poor performance. This stage requires processing an abundance of information, during which the supervisor may make a variety of errors. The second stage involves choosing a response to the poor performance. Various social norms may influence this stage. The first section therefore concludes with a review of the literature relevant to construction of the model, while the second section reviews the institute's research to date on the model. A variety of studies using different types of subjects and methods are described. The second section concludes that the model has been helpful in understanding this judgment process, but that further work needs to be done. (Author/TE)

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Technical Report 522

LEADER ATTRIBUTIONS AND LEADER BEHAVIOR: FIRST STAGE TESTING OF THEORETICAL MODEL

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The report consists of two main sections. The first presents a theory about how supervisors decide on the causes of a subordinate's poor performance and what they do about it. A two-stage process is suggested. The first stage involves the supervisor making attributions about the causes of the poor performance. This stage involves processing lots of information and a variety of errors may be made by the supervisor. The second stage involves the choice of a response to the poor performance. Various social norms may influence this

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stage. The first section of the report reviews the literature relevant to the construction of the model.

The second section of the report reviews our research to date on the model. A variety of studies using different types of subjects and methodologies are described. It is generally concluded that the model has been helpful in understanding this judgment process, but that further work needs to be done.

Technical Report 522

LEADER ATTRIBUTIONS AND LEADER BEHAVIOR: FIRST STAGE TESTING OF THEORETICAL MODEL

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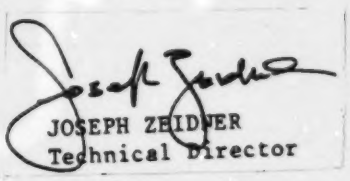
FOREWORD

For many years, the Army Research Institute for the Behavioral and Social Sciences (ARI) has maintained a continuous research program in support of Army officer accession, training, evaluation, and career retention. The results of one recent research investigation, discussed in ARI Research Report 1236, highlighted the importance of officer relationships with subordinates to the performance of the officer's job. The project discussed in the present report was initiated under the ARI Basic Research Program as an effort to study how officers can deal more effectively with subordinates who are performing poorly. This report describes the first stage of that effort.



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BRIEF

Requirement:

To develop and test a model of how supervisors can deal more effectively with subordinates who are performing poorly. The research reported is on the first stage of a three-stage project. This first stage describes the kinds of information used and errors made by supervisors when evaluating poor performers.

Procedure:

Five different studies are described. The first two are laboratory studies demonstrating supervisor bias. The third study is a job simulation showing how supervisors use effort and ability information to make judgments about the causes of performance. The final two studies were conducted in the field and they deal with the utilization of work history information and the consequences of the poor performance as determinants of supervisor evaluations.

Findings:

In general, supervisors: 1) blame subordinates rather than the environment or task for poor performance, 2) will weight effort information more than ability information, 3) use work history information correctly to infer an internal or external cause of poor performance, and 4) blame the subordinate for negative consequences of the poor performance.

Utilization of Findings:

The results of this research will be helpful in constructing training modules to increase the effectiveness of supervisor evaluations (stage three of the contract requirement). More specifically, we should be able to call supervisors' attention to the types of errors they are prone to make and suggest exercises and information-gathering techniques to reduce these errors.

LEADER ATTRIBUTIONS AND LEADER BEHAVIOR: FIRST STAGE TESTING OF THEORETICAL MODEL

CONTENTS

	Page
BACKGROUND	1
A Model of Diagnosing and Responding to Poor Performance	2
Moderators in the Model	3
OVERALL RESEARCH PLAN	6
REVIEW OF RESEARCH	7
Demonstration of Self-Serving Bias	7
Demonstration of Actor/Observer Differences	7
Supervisors' Use of Ability and Effort Cues	10
Field Tests of Supervisors' Use of Past Work History Information and the Consequences of the Poor Performance	11
CONCLUSIONS	16

LIST OF TABLES

Table 1.	Means of causal attributions between success/failure feedback conditions for both trials	8
2.	Subjects' ratings of the nurse in each incident as a possible cause of the poor performance (Study 1)	13
3.	Subjects' ratings of the appropriateness of directing a response at the nurse described in the incident (Study 1).	14
4.	Summated ratings of the appropriateness of directing a response at the nurse (Study 2)	15

LIST OF FIGURES

Figure 1.	A model of supervisors' responses to poorly performing subordinates	5

Leader Attributions and Leader Behavior:
First Stage Testing of Theoretical Model

One of the most time consuming and emotionally trying tasks of a supervisor or manager is dealing with subordinates who are performing poorly. Few of us like being punitive or the bearer of critical or negative feedback. Yet, the supervisor's role demands that such problems be dealt with and that his or her response be effective. The leader is responsible for the performance of his or her subordinates and poor performance cannot be tolerated.

The thrust of our research proposal was to study (1) how leaders make judgments about the causes of poor performance and (2) what they do about it. In describing these two processes we hoped to uncover a number of places or areas where supervisors made errors, were subject to bias or needed additional information. The long range outcome of the research is to remedy these errors, biases and deficiencies through various training exercises.

The outline of this present report will be as follows. First, we will present a brief review of the ideas that serve as the foundation for our research. Second, we will outline our overall research plan. Third, we will discuss that portion of the research that has been completed to date.

Background

What happens when a manager or supervisor observes or is informed of a subordinate's poor performance? That is, given that the manager has knowledge of the problem, how does he or she proceed to remedy it?

The literature (up until recently) related to this question has been rather sparse and tends to be of a descriptive or personal experience nature. There seems to be agreement that certain violations demand an immediate and punitive response. For example, theft, falsification of records, fighting with the supervisor, or flagrant insubordination usually result in severe reprimands, probation, and/or termination. In many cases, this response is dictated by company policy and the supervisor really has very little discretion over how to respond to the issue.

However, most cases are not so clear cut. What usually happens is that a subordinate misses a deadline, is tardy or absent occasionally, does not work overtime when needed, engages in horseplay, does sloppy work or some other less extreme violation of expected behavior. The task of the supervisor or manager is more complex in these settings, simply because there are few clear prescriptions or rules about how to proceed.

Probably the first thing that happens in cases for which no clear policy exists is that the supervisor tries to determine why the behavior occurred. In trying to ascertain the cause of the poor performance, the supervisor may

solicit information from a variety of sources including the subordinate in question. After this information is gathered, it must be processed, sorted, and evaluated and eventually some sort of reason or reasons are judged to be the contributing factors. For example, the poor performance might be due to a low skill level, a lack of motivation, poor instructions or insufficient support services.

After the cause is determined, the supervisor will usually select some course of action that fits the believed cause. So, for example, if the subordinate's poor performance is seen as being caused by low motivation, the supervisor might engage in a formal discipline procedure and verbally reprimand the employee. If, on the other hand, the reason is seen as insufficient information or support, the supervisor might institute change in the work setting and if ability is seen as the cause, training might be appropriate.

There are two key points about the process described above which need to be highlighted. First, it is a two-stage process. There is a diagnostic phase where the supervisor determines the cause of poor performance, and there is a decision phase where a response is selected from a set of alternatives. Second, we must recognize that this process entails active information processing on the part of the supervisor. Therefore, simply having good performance appraisal instruments or prescribed disciplinary procedures is not enough. In order to understand what is happening and how poor performance can be handled more effectively, we must understand this evaluation process more fully.

A Model of Diagnosing and Responding to Poor Performance

The model which is presented here is designed to represent the two-stage process described above. The foundations for its development come from a variety of sources and more detailed discussions of this literature can be found elsewhere.[1] However, the most important point that needs to be emphasized is that the assumptions and hypotheses built into the model were mostly generated from social psychological research on attribution theory rather than from the literature on industrial discipline or performance appraisal. A brief review of attribution theory and its relevance for performance appraisal issues can provide a better understanding of much of what follows.

Attribution theory is essentially a theory about people's naive assumptions about the causes of their own behavior and the behavior of others. All of us try to figure out both why we did things and why other people did what they did. The process of determining the causes of behavior is called an attribution process--we attribute our behavior or other people's behavior to various types of causes. By engaging in this attribution process, we provide order and understanding to our prediction of our own and others' actions.

The contributions of attribution theory to the problem of performance evaluation are threefold. First, research on the attributional process has shown that people are fairly systematic in their diagnoses of behavior. We

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[1] Green, S. G., and Mitchell, T. R. Attributional processes of leaders in leader-member interactions. Organizational Behavior and Human Performance, 1979, 23, 429-458.

know a fair amount about what sort of information is processed and how it is processed. Second, we have learned that there are a number of both rational and less rational activities that go on. Some of these "errors" in the attributional process are built into our model. Third, one major distinction that has been exceptionally helpful has been the idea that causes of behavior can be seen as falling into two major classes: internal and external. Internal causes are something about the person--his or her abilities, effort, personality and mood. External causes are something about the setting--task difficulty, available information, interpersonal pressures. Obviously, whether a supervisor makes an internal or external attribution about the causes of poor performance is critical for understanding what response will be selected.

The model is presented in Figure 1. One can see that the two main stages are labeled Links 1 and 2. Link 1 refers to the process of making an attribution and Link 2 refers to the process of choosing an appropriate response. For both of these stages there are some rational factors and some biases that affect the supervisor's judgments. The rest of this section briefly describes these "moderators" in more detail.

Moderators in the Model

The most obvious rational factors for helping a manager make attributions have been labeled distinctiveness, consistency, and consensus. Distinctiveness refers to the extent to which a subordinate has performed poorly on other tasks. The less distinctive, the more likely an external attribution. Consistency refers to the extent to which performance has been poor before on this particular task. The more consistency, the more internal the attribution. Finally, consensus refers to the extent to which other subordinates perform poorly at this task. The lower the consensus, the more internal the attribution.

Let's take an example. Suppose a subordinate fails to turn in a budget report on time. The supervisor gathers or recalls the above information and realizes that 1) this subordinate is always tardy in getting in reports, 2) the person is always late with financial reports, and 3) none of the other subordinates are late. In this case the supervisor is likely to attribute this poor performance to something about the subordinate (e.g., his ability or motivation). If, on the other hand, 1) the subordinate has never missed a deadline before on any task, 2) he or she always gets financial reports in on time, and 3) everybody had trouble this particular month with getting their reports in, then an external attribution is likely. Something about the financial situation this month (or perhaps too much work) is the probable attribution.

But, besides these rational, information cues there are other factors that may influence the attribution. Many of these factors may introduce bias into the process. First, and probably most important, is the actor/observer bias. It has been suggested that people think their own behavior tends to be caused by external forces but that the behavior of others is caused by internal factors. The behavior of someone else is salient to the outside observer, but it is the environment which is salient to the actor. So, a subordinate (actor) explaining the causes of his or her behavior is likely to see it as caused by external events while the supervisor (observer) is likely to see it as caused by internal dispositional factors.

Coupled with the actor/observer error are some self-serving biases. In general, people tend to attribute successes to themselves and failures to forces beyond their control. When we combine these two biases, we can see

that in cases of poor performance it is very likely that supervisors will see the causes as internal to the subordinate, while the subordinate will see the causes as external events. This difference in attributions is likely to lead to conflict, disagreement, and hard feelings.

There may be some other sources of error in this attribution phase. Anything that increases the distance (psychologically and physically) between the supervisor and the subordinate is likely to increase actor/observer and self-serving errors. For example, 1) the less the supervisor likes the subordinate, 2) the less experience the supervisor has with the subordinate's job, and 3) the more power the supervisor has, then the more the supervisor is likely to make internal attributions for poor performance.

The second link in the model is the decision phase--the supervisor must select a response. Obviously, if an internal attribution has been made, the response is likely to be directed at the subordinate (e.g., reprimand, training) and if an external attribution is made, a response directed at the task will be more appropriate (e.g., provide more support, change the task). Again, there are some rational and less rational factors that may affect this response.

On the rational side is the fact that supervisors at this point usually engage in some sort of cost/benefit analysis. That is, they weigh the pros and cons of various responses. They consider such factors as what is the probability of a given response 1) changing the subordinate's behavior, 2) having a positive or negative impact on other employees, 3) making the supervisor feel good, 4) adhering to organizational policy, and so on. These are clearly important inputs to the decision.

But, again, there are some less obvious factors that seem to enter in. For example, there is evidence that the consequences of the poor performance can affect the response by the supervisor. If the missed deadline for the financial report results in a lost contract, the supervisor is much more likely to be personal and punitive than if nothing negative occurs. In many cases, the subordinate may have no control over the outcome, but yet he or she is treated much more severely when something negative happens than when nothing negative happens.

Another source of bias in the response phase is likely to come from the subordinate in the form of apologies, excuses and external explanations. Even though the supervisor has accurately diagnosed that a subordinate performed poorly because of low motivation, he or she is less likely to be punitive and severe if the subordinate apologizes and promises it will never happen again. It is simply hard for a manager to be severe and punitive with someone who admits his or her mistakes.

A final source of bias springs partly from the actor/observer error. It seems as if supervisors are less likely to look at and understand ways that a task can be changed. We are much more apt to simply try to change the person rather than the task. This bias is partly caused by the fact that it is somehow easier to tell someone to "be different" than to try to change the environment. And it is also true that we seldom have the appropriate vocabulary or knowledge for dealing with changes in the task.

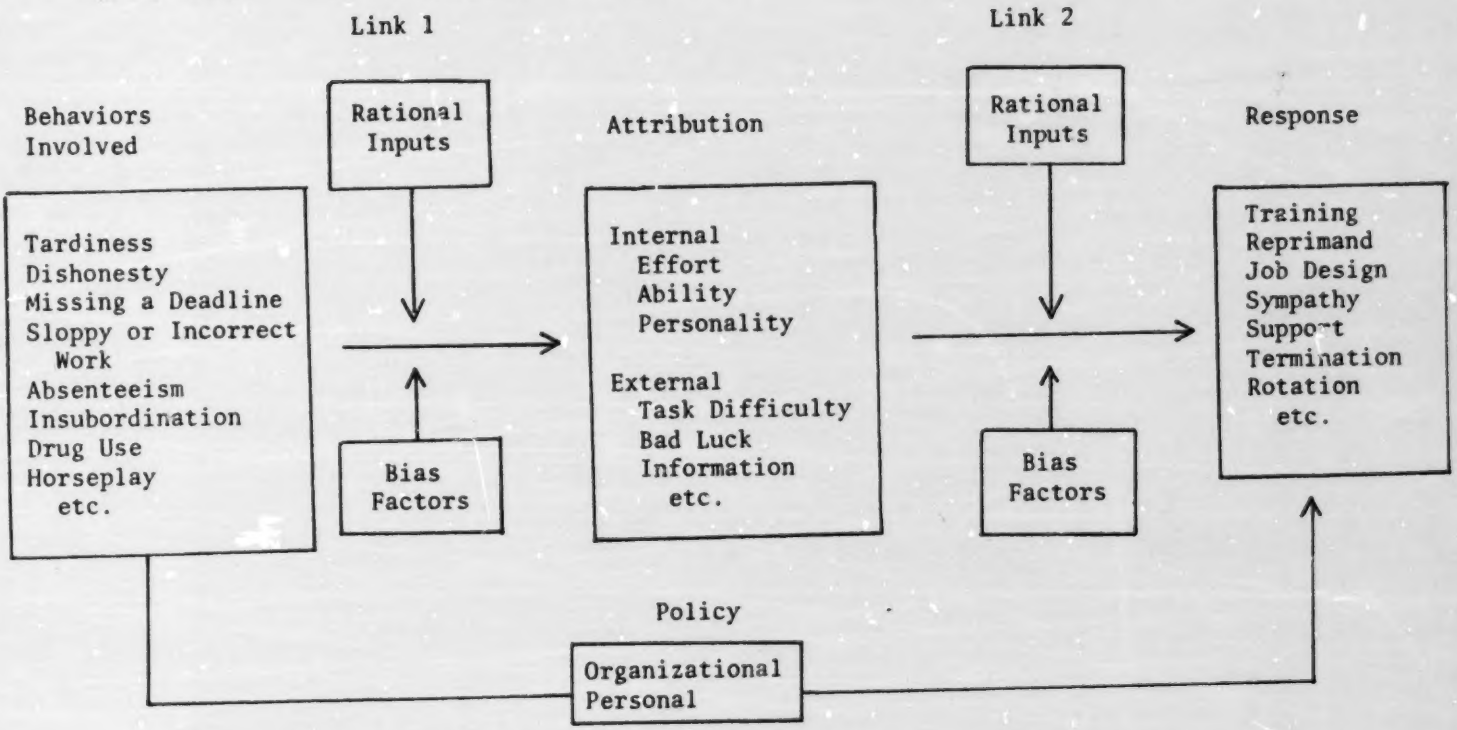

Figure 1. A Model of Supervisors' Responses to Poorly Performing Subordinates.

If one summarizes the implications of what goes on in the two phases we have described, the following conclusions emerge. First, supervisors are likely to see the poor performance of subordinates as internally caused. Second, there is likely to be disagreement about that attribution. Third, there are forces along with the internal attribution (such as outcome knowledge and ease of use) which will push the supervisor toward a personal, punitive response. However, apologies and social or organizational constraints may make it difficult to actually use such responses. Thus we are faced with a situation where a supervisor first of all may unknowingly make some errors of judgment about the causes of poor performance, and then secondly feel frustrated because of certain social or organizational prohibitions about what he or she feels should be done.

One final point needs to be mentioned. There are times when the above process is not used. More specifically, there are certain situations where there exists either a personal or organizational policy to deal with poor performance (e.g., three unexcused absences in a month requires a written reprimand). Under these conditions, the attributional process may not be active, and we have represented this circumstance in our model by having a line directly from the behavior to the response.

Overall Research Plan

We have described a sequence of attributional processes in leader-subordinate interactions which is complex and dynamic. A research plan was developed to examine these interactions and processes in more detail.

This plan was composed essentially of three stages. The first stage, now completed, focused on the attribution phase of the model above. More specifically, a number of studies were conducted to demonstrate the types of information leaders use when making attributions and some of the errors or biases that enter into these judgments.

The first two studies on which we will report demonstrate self-serving biases and the actor/observer differences. Both of these studies were laboratory studies. The third study was a work simulation investigating the degree to which supervisors preferred to use effort or ability cues in evaluating a poor performer. The final two studies examined the supervisor's use of distinctiveness, consistency and consensus information for making attributions along with some information about the seriousness of the consequences of the poor performance.

Each of the studies conducted during stage one is summarized in the following section of this paper. More comprehensive versions of each have also been prepared and can be obtained from the author upon request.

The second stage of the research effort will focus more directly on the leader's response to the performance observed. The impact of the postulated rational and less rational factors on the leader's selection of a particular response will be examined in a planned series of experiments. The third and final stage of the research will involve the development and testing of a training program to increase the effectiveness of leaders dealing with poor performing subordinates.

Review of Research

Demonstration of Self-Serving Bias

Numerous studies have illustrated that people attribute their successes to themselves (e.g., their effort or ability) and their failures to external causes (e.g., bad luck, an impossible task). However, few of these studies have attempted to test this proposition with tasks that were representative of actual jobs or in settings where the workers received feedback over a series of trials. The following study was designed to look at worker attributions when faced with success or failure feedback over a series of trials.[2]

Method. Two hundred and forty accounting students participated as subjects. They worked on a set of financial decisions concerned with determining which of several variances (a discrepancy between expected costs and actual costs), as shown in a budgetary report, should be investigated. They believed their decisions were to be evaluated using a predetermined normative model requiring no personal judgments by the experimenter. Each subject participated in two trials and received one of four feedback conditions: success-success; success-failure; failure-success; failure-failure. At the end of each trial the subjects indicated the degree to which their performance could be attributed to (1) decision-making ability, (2) intrinsic motivation, (3) task difficulty, and (4) luck.

Results. Table 1 presents the means for the four attribution measures for both trials. In general, people who went from success to failure saw ability as relatively less important, while people who went from failure to success saw ability and effort as relatively more important and task difficulty as relatively less important. Looking at the data just for the first trial suggests similar conclusions. Success people have higher scores than failure people on ability and motivation causes, while the reverse is true for task difficulty. We were not able to interpret the findings for the data reflecting luck as a cause.

In summary, these data suggest that people who fail are more likely to see the cause of the failure as due to task difficulty than people who succeed. People who succeed are more likely to attribute their success to ability and effort than people who fail. Also, when one goes from success to failure or failure to success, they change their attributions in the direction of a self-serving bias. In the second study for task 1 we attempted to demonstrate actor/observer differences in explaining a subordinate's poor performance.

Demonstration of Actor/Observer Differences

One of the interesting biases that emerge from the attribution literature is described as the actor/observer difference. For our purpose this difference in perception suggests that supervisors (observers) will tend to attribute a subordinate's behavior (the actor) more to internal causes than the subordinate will.

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[2]Soulier, M.T., DeCoster, D.T., and Mitchell, T.R. The effects of success, failure and accountability on the content of worker attributions. Working paper, University of Washington, Seattle, 1979.

Table 1

Means of Causal Attributions Between Success/Failure Feedback Conditions for Both Trials

			Feedback Condition											
			Success/ Success			Success/ Failure			Failure/ Success			Failure/ Failure		
		Trial	1st	2nd	p	1st	2nd	p	1st	2nd	p	1st	2nd	p
Attributions	Internal	Decision Making Ability	4.43	4.49		4.40	3.78	**	3.38	4.15	***	3.62	3.31	
		Intrinsic Motivation	4.00	4.35		3.80	3.81		3.55	4.08	**	3.37	3.81	*
	External	Task Difficulty	4.32	4.02		4.45	4.47		4.73	3.85	****	4.82	4.82	
		Luck	4.58	4.46		4.27	3.68	***	3.80	4.36	***	3.72	3.40	*

Comparison of means with one-tailed t-test.

* $p < .05$

** $p < .01$

*** $p < .005$

**** $p < .0005$

Method. To test this proposition, we used a two-phased research exercise.[3] In phase one 77 subjects (undergraduate students) enrolled in introductory management courses responded to 30 decision cases. Each subject read each case and indicated which of five levels of participation would be employed if he or she were the manager. These levels range from the manager makes the decision without participation to the manager utilizes an open group discussion in which consensus is the goal. For example, one case describes a manager that has to generate and implement a safety program in a plant containing dangerous chemicals. These 77 people also filled out a short Dogmatism scale.

From the first 15 cases we were able to select a group of students who were high on the use of participation and 15 who were low on the use of participation. From the Dogmatism scale scores we could also select a group of people who were high or low on Dogmatism. The second 15 cases were replicas of the first 15 in that certain environmental factors were the same (e.g., high or low knowledge on the part of subordinates). Therefore, we could run a 2(Dogmatism) x 15(different decision environments) analysis of variance with the amount of participation on the second 15 cases as the dependent variables. We could also run a 2(high or low participation on first 15 cases) x 15(environments) ANOVA with the same dependent variable. These analyses gave us information about the variance accounted for in participation behavior that could be attributed to (1) the environment, (2) Dogmatism, and (3) a general tendency to be participative. Note that factors 2 and 3 are internal causes of behavior while factor 1 is an external cause.

In phase 2 we had 71 subjects serve in one of four observer conditions. They were given some information about a manager (Mr. Grant) who was supposedly their subordinate. The subordinate was either high or low in dogmatism or high or low in "tendency to be participative" (thus our 4 conditions). They then read the last 15 decision cases and indicated what they thought the subordinate would do. Thus these responses allowed us to again use 2 x 15 ANOVA's to determine the degree to which the observer predicted the actor's behavior based on the decision environment or on personal characteristics such as Dogmatism or tendency to be participative.

Results. For the actor responses from phase 1, "tendency to be participative" accounted for 9.4% of the variance and the situation accounted for 23% of the variance in participative behavior. There was no effect for Dogmatism. For the observers in phase 2, tendency to be participative and the situation were again significant. However, of added interest was the fact that there was a main effect for Dogmatism accounting for 7% of the variance.

The results seem to show fairly clearly that at least for the Dogmatism score, observers attributed this as more causal than it actually was. That is, their judgments about what their subordinate would do were more influenced by their perceptions of the degree to which the subordinate was dogmatic than was the actual behavior of the high and low dogmatic subjects. This result demonstrates the actor/observer difference as predicted.

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[3]Mitchell, T. R., and Knowlton, W. A., Jr. Actor-observer differences in explaining decision making behavior. Working paper, University of Washington, Seattle, 1979.

Supervisors' Use of Ability and Effort Cues

Since supervisors seem to, in general, use internal attributions more than external ones to explain subordinate failures, we decided to investigate the internal attributions more thoroughly. Given the existing literature, we expected effort attributions to result in more extreme performance evaluations on the part of the supervisor than ability attributions. Therefore, we set up a study where supervisors would be given information about the effort or ability of their subordinates, and we measured the supervisors' responses.[4]

Method. Forty groups were run. The supervisor (naive subject) worked with three subordinates (confederates) on a coding task requiring some data to be added and transferred from existing data sheets. In each group the supervisor was faced with two average performers (defined in terms of the number of sheets completed) and one good performer or poor performer. Certain informational cues were manipulated so that the leader would attribute the good/poor performance to effort or ability. The combinations of this information resulted in the following design (10 leaders in each condition):

		Effort Cue	Ability Cue	Condition
Performance of Key Subordinate	Good	High	Average	1
		Average	High	2
	Poor	Low	Average	3
		Average	Low	4

The ability cue was manipulated by the use of Wonderlik Personnel Test scores. All four subjects took the test, and the leader was given the scores for the three subordinates. The key subordinate was either the same (for the average ability conditions) as the other two subordinates or substantially higher or lower (for the high or low ability cue). Effort was manipulated through behavioral cues. The key subordinate either worked at the same pace (for the average effort conditions) as the other two subordinates or worked substantially harder/less hard than the other two subordinates. After the one-hour session was over the supervisor rated the three subordinates on a number of measures including manipulations checks, various aspects of performance, and an overall evaluation of performance.

Results. The manipulations checks were generally supportive, although some difficulties arose. The overall assessment of performance (a summed composite of 6, 7-point scales) supported our hypothesis. The rating of the good performer with high effort was 39.9, and this score was 36.5 for the good performer with high ability. The poor performer with low effort was rated lower than the poor performer with low ability (13.7 to 21.1). A 2 x 2 analysis of variance shows a significant main effect for performance, but more importantly a significant interaction for these means ($F[1,36] = 28.34$, $p < .001$). These data suggest quite strongly that even when actual

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[4]Knowlton, W. A., Jr. The effects of causal attributions on a supervisor's evaluation of subordinate performance. Journal of Applied Psychology, 1980, 65, 459-467.

performance is exactly the same, rated performance will differ as a function of the attribution made by the supervisor. In this case, good performance attributed to high effort was rated more positively than good performance attributed to high ability. Poor performance attributed to low effort was rated more negatively than poor performance attributed to low ability.

Field Tests of Supervisors' Use of Past Work History Information and the Consequences of the Poor Performance

Two studies have been conducted in a similar fashion with similar subjects in an attempt to test some of the model's central hypotheses.[5] Of major importance were such questions as (1) does information about past work history influence attributions, (2) are attributions related to responses, (3) does the seriousness of the outcome affect the attributions and responses, (4) does perceived responsibility influence the response, and (5) do supervisors in general use internal attributions for subordinate poor performance?

The two experiments utilized the same background procedures. The first stage of the research involved interviews designed to gather critical incidents of poor performance by nurses in a hospital setting. The second stage involved supervisors reading, making attributions, and indicating how they would respond to some of these incidents. Information about the nurses' work history (distinctiveness, consistency, consensus), likely attributions, apologies, responsibility, and the consequences of the poor performance were manipulated within these cases to create different experimental conditions.

In stage one, the Directors of Nursing of 7 hospitals in the Seattle area were contacted, informed of the research, and agreed to participate. In-depth interviews gave us critical incidents of poor performance, as well as information about possible causes of the poor performance (attributions) and possible responses to poor performance. The incidents serve as our stimulus materials, and the information about potential causes and responses helped us to develop realistic scales on which supervisors could respond.

Method (Experiment 1). The first experiment utilized six episodes of poor performance. Based on consistency, consensus, and distinctiveness, three levels of work history for the nurse in question were used (good work history, no work history and poor work history), as well as two levels of outcome severity (severe, not severe). These manipulations produced a 3 x 2 design with each case representing one cell. Each participant responded to six cases which represented all six conditions by giving attributions and responses.

Twenty-three nursing supervisors from one of the hospitals participated in the study. Six cases were used involving poor performance on the hospital ward. For example, one episode dealt with the administration of too much of a dangerous drug, while another dealt with the failure of a nurse to put up the side railing on a patient's bed. The cases were one or two paragraphs long.

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[5]Mitchell, T. R., and Wood, R. E. Supervisors' responses to subordinate performance: A test of an attributional model. Organizational Behavior and Human Performance, 1980, 25, 123-138.

Each case provided a work history for the nurse in question. She was described as having done well on other tasks, done well on this task in the past, and her colleagues had also had difficulty with this task (a good work history--high distinctiveness, low consistency, high consensus), or she was described as having done poorly on other tasks, she had made similar mistakes before, and her peers seldom made this error (a poor work history). A third condition had no work history.

The seriousness of the outcome was provided as information within the case. For example, when the wrong drug was administered, the patient suffered either mild discomfort or a cardiac arrest. There were six different cases and six different experimental conditions. The cases and conditions were counterbalanced so that for each case the manipulations appeared approximately an equal number of times.

There were three types of measures: manipulation checks, attributions, and responses. The manipulation checks asked about the seriousness of the outcome and the degree to which the nurse in question was generally a good performer. The attribution questions provided eight possible causes for the nurse's performance. Four of these were internal (e.g., the nurse was not putting enough effort into her work), and four were external (e.g., the nurse was working on a continually busy ward without support staff). The supervisors responded to each attribution on a "very likely cause" to "very unlikely cause" seven-point scale. The four internal items were summed to form an internal composite; the four external items formed an external composite. In addition, a summary question was asked that inquired, "In general, how important do you feel the nurse's personal characteristics (such as ability, attitudes, mode, and so on) were as possible causes of her behaving the way she did?" Participants responded on an "extremely important" to "extremely unimportant" seven-point scale. A second summary question asked about the degree to which the supervisor felt the characteristics of the situation (e.g., busy ward) were as causes of the behavior.

The response questions provided ten different actions ranging from "take no action at all" to "immediate termination." Some of these actions, such as verbally reprimand the nurse, were directed at the nurse, and some, such as reschedule the work load, were directed at the task. Some were positive in nature (e.g., provide counseling) and some were negative (e.g., termination). Participants indicated their response on a seven-point "very appropriate" to "very inappropriate" scale. Again, summary questions were used which asked, "To what extent do you feel this incident demands that you direct your response at the nurse and attempt to change something about her (her job attitudes, level of effort, etc.)," and a second question asked, "To what extent would you want to change something about the situation?" Seven-point scales ranging from "not at all" to "to a great extent" were used on both questions.

Results (Experiment 1). An analysis of the manipulation checks showed that the mean rating for the good work history ($\bar{X}$ = 6.00) condition was significantly higher ($t = 16.0$, $p < .001$) than that for the poor work history ($\bar{X}$ = 1.86). Comparison of the mean ratings for the serious ($\bar{X}$ = 6.94) and non-serious ($\bar{X}$ = 3.80) conditions also revealed significant difference ($t = 10.7$, $p < .001$) in the expected direction.

Two hypotheses were tested for the causal attribution questions: (1) that work history, in terms of distinctiveness, consistency, and consensus

would have a main effect on a subject's internal attributions of causality; (2) that seriousness of outcome would have a main effect on subjects' internal attributions of causality.

A 2 x 3 analysis of variance was run, with the dependent variable being the subjects' overall rating of the nurse as a cause of the incident (the summary question). These results are shown in Table 2. Poor work history led to the nurse being rated higher as a possible cause of the incident being evaluated ($F[2,22] = 28.06$, $p < .001$). Also, as hypothesized, a more serious outcome resulted in a higher rating for the nurse as a possible cause of the incident of poor performance ($F[1,22] = 9.00$, $p < .01$). The interaction was not significant. The summary question which asked about the degree to which the environment was seen as a cause produced a main effect for work history ($F[2,22] = 16.05$, $p < .001$). A poor work history led to the environment being rated lower as a possible cause of the incident being evaluated. The main effect for seriousness of outcome and the interaction were both not significant. We should add that a more detailed analysis of the internal and external attribution composites produced essentially the same results.

Table 2

Subjects' Ratings of the Nurse in Each Incident as a Possible Cause of the Poor Performance (Study 1)

	Work History		
Outcome	Good	Not Available	Poor
Non-Serious	3.34	4.57	6.18
Serious	4.14	5.65	6.36

Note: Higher values indicate a higher rating of the nurse as a possible cause, i.e., more internal attribution.

It was also hypothesized that both the work history of the nurse and seriousness of the outcome would influence the supervisor's ratings of the appropriateness of directing a response at the nurse. In addition, it was felt that these two factors would also influence the severity of the response.

A 2 x 3 analysis of variance, with the summary question regarding the appropriateness of directing a response at the nurse as the dependent variable, provided support for the first hypothesis. These results are shown in Table 3. Poor work history resulted in higher ratings of a response directed at the nurse ($F[2,22] = 10.72$, $p < .001$). Seriousness of outcome also had a main effect on choice of response ($F[1,22] = 7.75$, $p < .01$), while the interaction was not significant.

Table 3

Subjects' Ratings of the Appropriateness of Directing a Response at the Nurse Described in the Incident (Study 1)

	Work History		
Outcome	Good	Not Available	Poor
Non-Serious	4.74	5.36	6.50
Serious	5.61	6.48	6.59

Analyses were also conducted on the specific responses. When they were divided into responses directed at the nurse or at the job, and when the three most negative personal responses were looked at (i.e., termination, written and verbal reprimand), the results were essentially the same. A severe outcome resulted in more personal and severe punishment, as did a poor work history.

A third hypothesis suggested that internal attributions would be related to responses directed at the subordinate. To test the hypothesis, we correlated the summary attribution questions with summary response questions. The more the supervisor felt that the nurse was the cause of the incident, the more she considered it appropriate to direct her response at the nurse ($r = .55$, $p < .01$). Also, the more the supervisor felt that the situation was responsible, the more she considered it appropriate to direct her response at the situation ($r = .64$, $p < .01$).

Our last hypothesis suggested that there would be a general bias on the part of the supervisors toward using internal attributions and internal responses. To test this hypothesis, we again used the summary questions. The mean difference between the internal attribution question and external attribution question was significant ($t = 3.63$, $p < .001$) and in the predicted direction. Over all conditions, the nurse was more likely to be seen as the cause ($\bar{X} = 5.07$) of the incident than the situation ($\bar{X} = 4.41$). The results for the two summary response questions were similar. The t value was 10.89, ($p < .001$) and the means were 5.87 for the internal response question and 3.76 for the external response.

Method (Experiment 2). Twenty-three nurse supervisors from a different hospital were the respondents and the procedures were the same as in the first experiment, except that four cases were used instead of six. A 2 x 2 design was used with one factor being the seriousness of outcome (severe or not severe). The second factor was some "additional information" supplied directly to the respondent about an appropriate attribution (internal or external). The additional information variable was provided by adding a section which supplied the respondent with an attribution. For example, the internal attribution information for one of the episodes was, "From your discussions with Nurse Connally and some other nurses on the ward, you believe that the failure to tape down the catheter was due to a lack of effort on

Nurse Connally's part. She had not spent sufficient time or thought on her duties at the time of the incident. This lack of attention to detail had caused an error on a somewhat simple task at a time when the ward was not very busy."

The severity of outcome was manipulated the same way as in Experiment 1. As before, the manipulations and cases were counterbalanced so that each combination appeared approximately an equal number of times.

There were two manipulation checks and the attributional questions used in Experiment 1 were dropped, because the attribution was directly manipulated. The response questions were the same as in Experiment 1, with ten separate behaviors and two summary items.

Results (Experiment 2). The manipulations appeared successful. The mean rating of seriousness for the serious consequences condition was 6.64, while it was 4.14 for the non-serious condition ($t = 7.09$, $p < .001$). The mean rating of the nurse as a cause was 6.28 in the internal attribution condition and 3.31 in the external condition ($t = 9.84$, $p < .001$). The mean rating of the situation as cause was 2.20 in the internal condition and 5.67 in the external condition ($t = 11.10$, $p < .001$).

We had hypothesized that the internality of the attribution and the seriousness of the outcome would affect both the response and the seriousness of the response. A 2 x 2 analysis of variance supported these hypotheses for the subjects' ratings of the appropriateness of directing a response at the nurse (Table 4). An internal attribution resulted in the response being directed at the nurse ($F[1,22] = 62.88$, $p < .001$) as did a serious outcome ($F[1,22] = 5.25$, $p < .03$).

Table 4

Summated Ratings of the Appropriateness of Directing a Response at the Nurse (Study 2)

Outcome	Attribution	
	External	Internal
Non-Serious	3.50	6.72
Sericus	4.63	6.68

The summary question for the degree to which the response should be directed at the situation produced a main effect for the attribution ($F[1,22] = 122.58$, $p < .001$) but not for the outcome seriousness or the interaction. An external attribution resulted in the response being directed at the situation ($\bar{X} = 5.20$) more than an internal attribution ($\bar{X} = 1.70$). As before, when the ten specific responses were first broken down into the internal responses and the external responses, similar results appeared.

While attributions were manipulated in study 2 but not study 1, it was still possible to test whether internal attributions were related to internal responses and external attributions to external responses. Two of the manipulation check items asked to what extent the supervisor thought the nurse was the cause or the situation was the cause of the incident. These two items were correlated with the summary response questions.

The results supported the hypothesis. The more the supervisor saw the nurse as the cause the more her response was directed at the nurse ($r = .70$, $p < .01$). The more the supervisor saw the cause as external, the more her response was directed at external factors ($r = .71$, $p < .01$).

Finally, to test for the general bias toward personal responses we used the summary response questions only because no attributions were made in study 2. Across all conditions, the mean appropriateness ratings were 5.36 for an internal personal response and 3.57 for an external response ($t = 4.46$, $p < .001$). These results suggest that internal responses were preferred over external ones regardless of the conditions surrounding the incident.

Conclusions

The experiments described above confirmed a number of hypotheses concerning the attribution process. These findings can be summarized as follows:

1. People in general see their own failure as externally caused and their successes as internally caused.

2. Subordinates tend to see their poor performance as externally caused, while supervisors see it as internally caused.

3. When supervisors have internal attributions for poor performance of subordinates, they are more likely to be punitive and direct their response at the subordinate than when they have external attributions.

4. A poor work history, as reflected by consistency, consensus, and distinctiveness information, is likely to result in internal attributions and a personal punitive response by the supervisor.

5. When the outcome of the performance failure is serious, the supervisor is more likely to have internal attributions and utilize personal punitive responses than when the outcome is not serious.

6. Given the same performance, a supervisor will make more extreme evaluations based on an effort attribution than an ability attribution.

While many of these findings need to be replicated, our initial feeling is that there is substantial evidence that leaders make attributions in the manner we have postulated. The primary focus of our work now shifts to the important arena of leader behavior. The critical hypothesis that leader interpretations of subordinate performance can be systematically linked to

leader responses to this performance in a predictable fashion will be critically examined in a series of carefully designed tests. Should the results of these tests suggest confirmation of this hypothesis, the foundation will be laid for the development of a training program with high potential for modifying leader behaviors in a direction which would lead to more constructive leader-subordinate interactions.